



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, NC 27711

February 3, 2011

MEMORANDUM

SUBJECT: Supplemental Analysis of PM₁₀ Air Quality from Locations Evaluated by Zanobetti and Schwartz (2009)

FROM: Scott Jenkins, OAR/OAQPS/HEID /s/

TO: PM NAAQS Review Docket EPA-OAR-2007-0492

Overview

The purpose of this memorandum is to update the analysis of PM₁₀ air quality concentrations in locations evaluated in the epidemiological study by Zanobetti and Schwartz (2009). The analysis of these air quality concentrations was originally reported by Schmidt and Jenkins (2010). In that original analysis, PM₁₀ concentrations were reported in each study location for all available years from 1999 to 2005 (the overall timeframe of the study). However, in some locations, Zanobetti and Schwartz (2009) evaluated associations with mortality in only a subset of the years 1999 to 2005. To better match the years for which Zanobetti and Schwartz evaluated associations with health effects, Table 1 below reports PM₁₀ concentrations for each study location, based only on the years evaluated in that specific location.

The methods and monitors used to generate the air quality concentrations in Table 1 have been described previously (Schmidt and Jenkins, 2010) and will not be repeated here. In some locations, appropriate PM₁₀ air quality data were not available for all of the years during which Zanobetti and Schwartz evaluated associations with mortality (e.g., because data completeness requirements, as described in Schmidt and Jenkins (2010), were not met). In these locations, we used the available PM₁₀ data that both met completeness requirements and overlapped with the study period for that location.

Table 1. PM₁₀ Air Quality Concentrations in Locations Evaluated by Zanobetti and Schwartz (2009)

<u>Study Area</u>	<u>Years of Study</u>	<u>Average of 3-year design values (µg/m³)</u>	<u>Average of 98th percentile values (µg/m³)</u>
Akron, OH	1999-2004	63	50
Albuquerque, NM	2000-2005	151	113
Allentown, PA	2000-2005	63	45
Atlanta, GA	1999-2005	128	74
Bakersfield, CA	1999-2005	184	121
Baltimore, MD	2000-2005	92	68
Birmingham, AL	1999-2005	154	122
Charleston, SC	1999-2005	59	42
Chicago, IL	2000-2005	113	91
Cincinnati, OH	1999-2004	88	60
Cleveland, OH	1999-2004	116	90
Columbia, SC	2002-2005	144	85
Columbus, OH	1999-2004	100	73
Davenport, IA	2000-2005	146	108
Davie, FL	1999-2005	50	39
Denver, CO	2000-2005	97	68
Des Moines, IA	2000-2005	95	66
Detroit, MI	2000-2005	165	105
Easton, PA	2000-2005	121	94
El Paso, TX	2000-2002	217	155
Erie, PA	2004-2005	56	42
Gary, IN	1999-2002	147	93
Harrisburg, PA	2000-2005	68	51
Los Angeles, CA	2000-2005	109	89
Louisville, KY	2001-2005	71	56
Memphis, TN	2001-2005	80	55
New Haven, CT	2001-2005	89	79
New York, NY	2000-2005		57
Omaha, NE	2000-2005	138	84
Phoenix, AZ	1999-2001	202	187
Pittsburgh, PA	2000-2005	139	112
Provo, UT	1999-2005	108	77
Raleigh, NC	2000-2005	58	45
Sacramento, CA	2000-2005	103	66
Salt Lake City	1999-2005	283	98

<u>Study Area</u>	<u>Years of Study</u>	<u>Average of 3-year design values ($\mu\text{g}/\text{m}^3$)</u>	<u>Average of 98th percentile values ($\mu\text{g}/\text{m}^3$)</u>
Scranton, PA	2000-2005	65	47
Seattle, WA	1999-2005		46
Spokane, WA	1999-2002	98	73
St. Louis, MO	1999-2005	165	138
Steubenville, OH	1999-2003	104	83
Tampa, FL	1999-2002	112	78
Taylors, SC	2000-2005	59	47
Toledo, OH	2001-2003	72	61
Washington, PA	1999-2005	77	56
Wilkes-Barre, PA	2000-2005	69	49
Wilmington, DE	2000-2005	68	51
Winston, NC	1999-2005	60	47
Average across cities		110	77

References

- Schmidt, M.; Jenkins S.M. (2010). Analyses of PM₁₀ and PM_{10-2.5} Data for the PM NAAQS Review. Memorandum to PM NAAQS review docket EPA-HQ-OAR-2007-0492.
- Zanobetti A; Schwartz J. (2009). The effect of fine and coarse particulate air pollution on mortality: A national analysis. Environ Health Perspect, 117: 898-903.